PANDEMIC PLANNING and RESPONSE 2006 IHS TECHNOLOGY CONFERENCE

Navajo Area Indian Health Service

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PANDEMIC PLANNING and RESPONSE

1. ***Overview of the current Pandemic Threat***
2. ***What is the Potential Impact?***
3. ***Healthcare Pandemic Planning***
4. ***Role of Technology in Preparedness***
5. ***Questions and Discussion***

PUBLIC HEALTH PLANNING (is not just about Bird Flu)

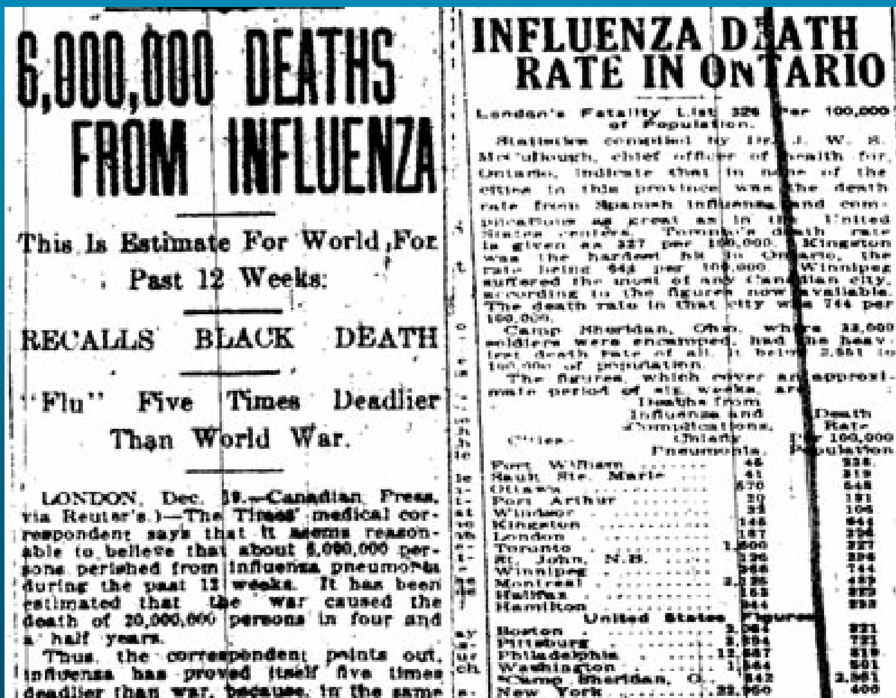
Endemic Disease Toll

- Hepatitis B - 0.5 to 1.2 million deaths/year
- Malaria - 1 million deaths/year.
- Tuberculosis - 2 million deaths/year
- HIV - 3 million deaths/year
- Influenza – 0.25 to 0.5 million deaths/year

Pandemic Disease Toll

- 1918 Influenza - 40 million deaths/18 months

#1 - OVERVIEW AND SUMMARY OF PANDEMIC THREAT



6,000,000 DEATHS FROM INFLUENZA

This Is Estimate For World For Past 12 Weeks:

RECALLS BLACK DEATH

"Flu" Five Times Deadlier Than World War.

LONDON, Dec. 19.—Canadian Press, via Reuter's.)—The Times' medical correspondent says that it seems reasonable to believe that about 6,000,000 persons perished from influenza pneumonia during the past 12 weeks. It has been estimated that the war caused the death of 20,000,000 persons in four and a half years.

Thus, the correspondent points out, influenza has proved itself five times deadlier than war, because, in the same

INFLUENZA DEATH RATE IN ONTARIO

London's Fatality List 326 Per 100,000 of Population.

Statistics compiled by Dr. J. W. S. McCullough, chief officer of health for Ontario, indicate that in none of the cities in this province was the death rate from Spanish influenza and complications as great as in the United States centres. Toronto's death rate is given as 327 per 100,000. Kingston was the hardest hit in Ontario, the rate being 644 per 100,000. Winnipeg suffered the most of any Canadian city, according to the figures now available. The death rate in that city was 744 per 100,000.

Camp Sheridan, Ohio, where 33,000 soldiers were encamped, had the heaviest death rate of all, it being 2,561 to 100,000 of population.

The figures, which cover an approximate period of six weeks, are:

Cities.	Deaths from Influenza and Complications, Chiefly Pneumonia.	Death Rate Per 100,000 Population.
Fort William	46	336
Sault Ste. Marie	41	319
Ottawa	670	648
Port Arthur	20	181
Windsor	33	106
Kingston	148	644
London	187	326
Toronto	1,600	327
St. John, N.B.	136	324
Winnipeg	568	744
Montreal	2,126	482
Halifax	163	285
Hamilton	244	292
United States Figures		
Boston	3,[illegible]	821
Pittsburg	3,594	721
Philadelphia	12,687	819
Washington	1,544	801
Camp Sheridan, O.	842	2,561
New York	22,960	400

June 2006

CURRENT PANDEMIC THREAT: Epizootic Avian Flu

epizootic – a disease attacking many animals at the same time; widely diffused and rapidly spreading

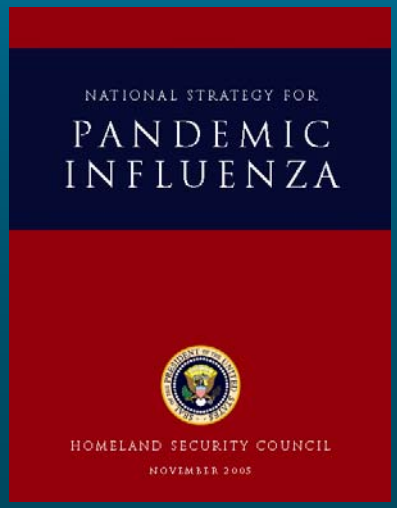
Avian Influenza

"Avian influenza played a role in the last 3 pandemics. Two of these pandemic causing viruses remain in circulation and are responsible for the majority of influenza cases today."

Homeland Security Council's

National Strategy for Pandemic Influenza

November 2005



Influenza Primer

Influenza A is composed of subtypes.

- Hemagglutinin – (HA) 16 known subtypes
- Neuraminidase – (NA) 9 known subtypes

(All known Influenza A subtypes are found in birds)

Influenza A viruses change via:

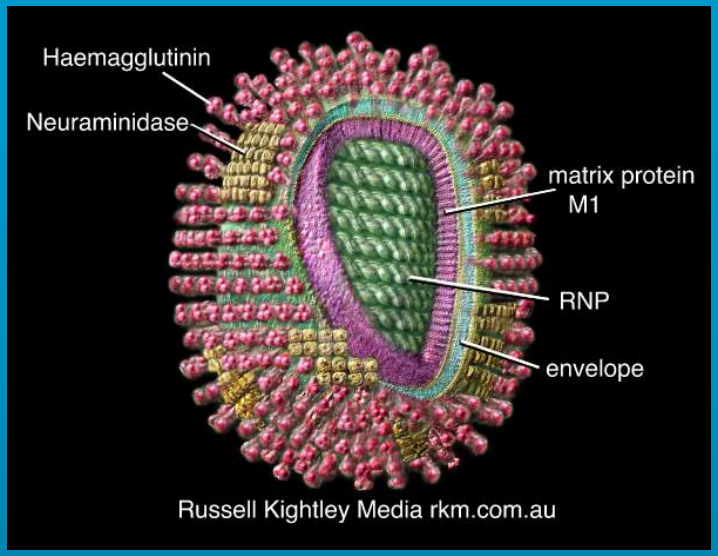
1. Reassortment
2. Antigen Shift
3. Recombination

The Influenza A Virus

- In the last six pandemics since 1800, three subtypes reappeared in repeating patterns of H1, H2, and H3.
- Some researchers say the H5, H7, and H9 hemmaglutinin have never been efficiently passed human to human.
- A few researchers predict the next pandemic influenza will be of H2 subtype and appear around 2025.

Science 18 November 2005:
Vol. 310. no. 5751, pp. 1112 - 1113

The H5N1 Influenza Virus



- The 1918 influenza virus is now thought to be a pure avian virus that adapted to humans.
- Most researchers point to H5N1's new acquisition of E627K polymorphism on the PB2 sequence that are in all H1, H2, and H3 isolates.
- Two other polymorphisms (S227N & G226S) increase affinity for mammalian receptors.

H5N1 Influenza

Human familial clusters of H5N1have been confirmed in Turkey, Iraq, China, Cambodia, Vietnam, Indonesia, Thailand, and Azerbaijan.

Suspected clusters have been reported in India and Pakistan.

H5N1 Influenza

Patients from the recent Kubu Sembilang, Indonesia, human-to-human cluster “had a much higher viral loads in the throat and nose…[and]…showed a substitution of glutamic acid with lycine at position 627 in the PB2 component of the polymerase gene. The mutation is thought to allow the virus to survive in the cooler nasal regions.”

Nature
Published online:
31 May 2006, *Pandemic 'dry run' is cause for concern*
Declan Butler

Avian Influenza

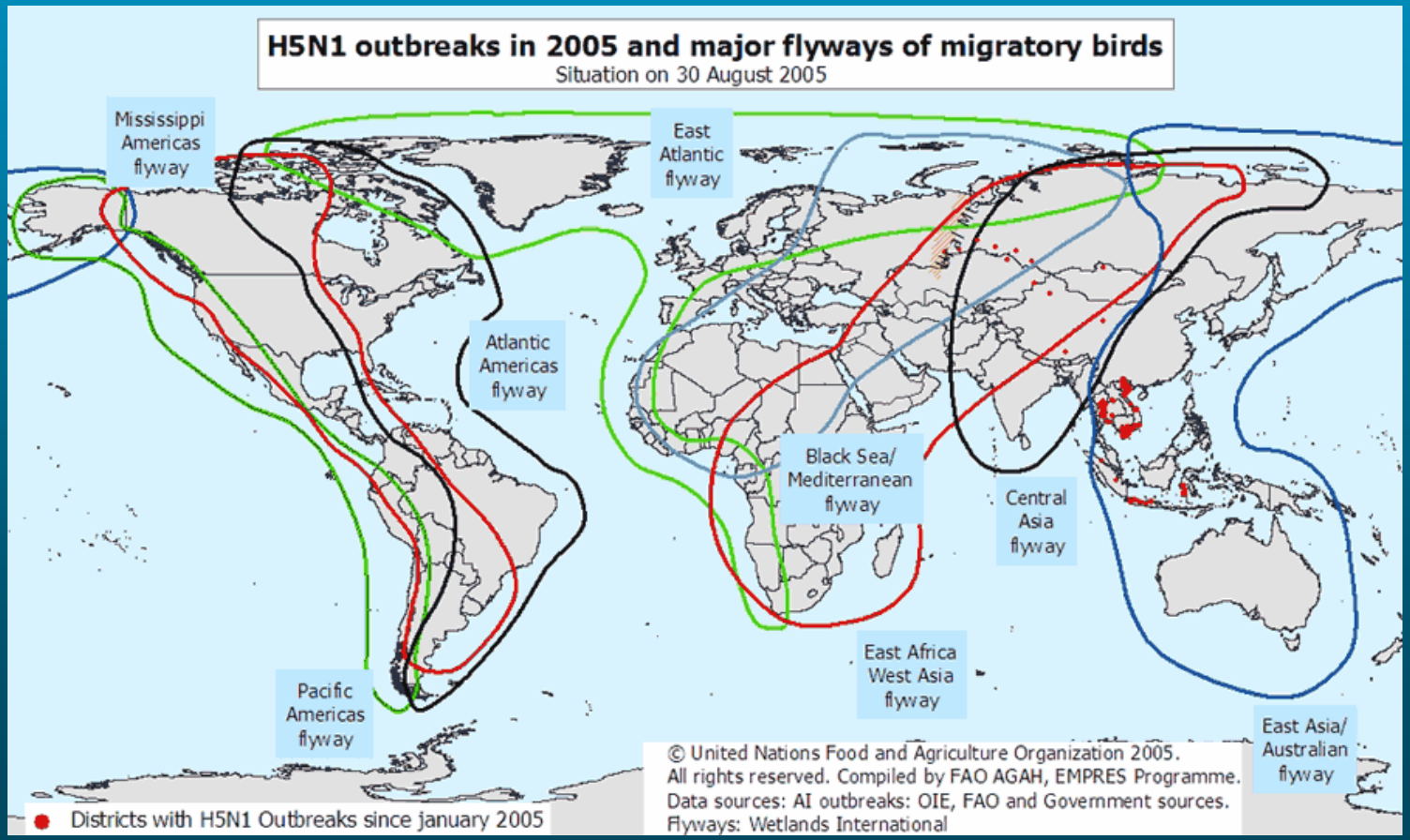
Some human exposures are greater than others.

H5N1 Avian Influenza

We Know it's Coming!

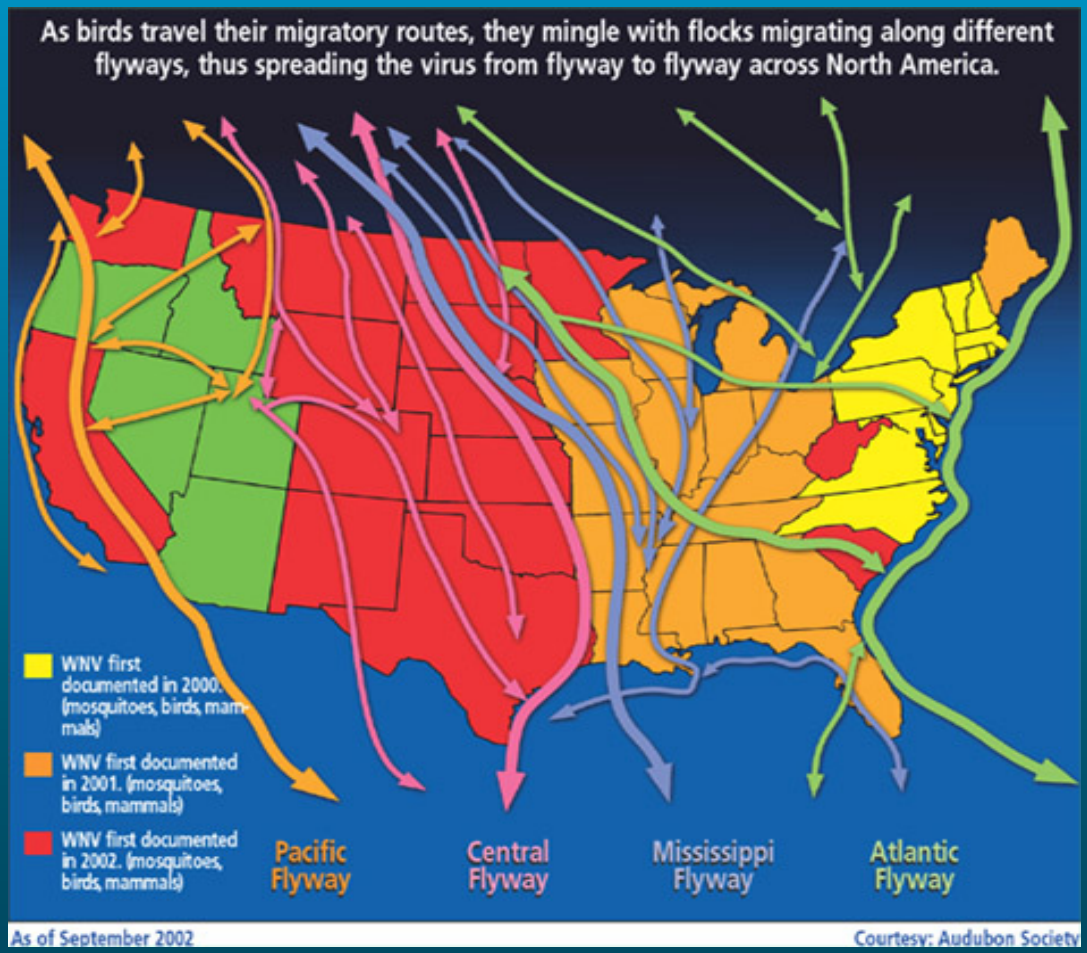
H5N1 Avian Influenza

Endemic in Eurasia within Long Range Migrating Birds.



H5N1 Avian Influenza

And we are in the flight path.



H5N1 Avian Influenza

Certain waterfowl are asymptomatic carriers.

H5N1 has been isolated in ducks, geese, swans, gulls, turkeys, chickens, sparrows, spoon bills, herons, egrets, falcons, tigers, leopards, cats, civets, ferrets, and martens. Antibodies have been found in dogs and swine.

H5N1 Avian Influenza

Spread through bird feces, saliva, and infected water.

“Studies have shown influenza virus remains viable in lakes for over 200 days”

H5N1 Avian Influenza

There is no known link of H5N1 transmission from wild birds to humans .

Cats were previously thought to have complete immunity to Influenza A strains such as H5N1.

Zootic H5N1 Avian Influenza

Confirmed Human Cases

Three in 2003

46 in 2004

95 in 2005

84 to date in 2006

June 20, 2006

WHO

H5N1 Avian Influenza

A Recent Change in Tone

"Even if the pandemic cannot be stopped, public health interventions might buy time to allow countries to further strengthen their response systems, as well as accelerating the production of pandemic vaccine."

Fadela Chaib, March 3, 2006,

World Health Organization Spokeswoman

Following investigation of Azerbaijan cluster and consecutive deaths in central Java, Indonesia.

H5N1 Avian Influenza
May 5, 2006

"I've worked with flu all my life, and this [H5N1] is the worst influenza virus that I have ever seen." He predicted it would take at least 10 more mutations to give the virus the ability to spread from person to person. He added there was no way to know when or if that will happen. "All of those mutations are out there . . . but the virus hasn't succeeded in bringing it together."

Robert G. Webster, PhD

Renowned Influenza Virologist

St. Jude Children's Research Hospital

H5N1 Avian Influenza Changing Recommendations

“The use of full barrier precautions (standard, contact, and airborne precautions, plus eye protection) should be used, when possible, when working in direct contact with suspected or confirmed AI-infected patients."

WHO Infection control recommendations for avian influenza in healthcare facilities, May 2006.

Tracks Global Pandemic Status by Assigning Alert Phases

Interpandemic Period

Phase 1. No new virus subtypes have been detected in humans. An novel virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human infection or disease is considered to be low

Phase 2. No new virus subtypes have been detected in humans. However, a circulating animal virus subtype poses a substantial risk of human disease

Pandemic Alert Period

Phase 3. Human infection(s) with a new subtype but no human-to-human spread or at most rare instances of spread to a close contact

Phase 4. Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans

Phase 5. Larger cluster(s) but human-to-human spread is still localized, suggesting that the virus is becoming increasingly better adapted to humans but may not yet be fully transmissible (substantial pandemic risk)

Pandemic Period

Phase 6. Pandemic phase: increased and sustained transmission in the general population

Postpandemic Period

Return to the Interpandemic Period (Phase 1)

H5N1 Avian Influenza

WHO – Pandemic Alert Phase 3

Human infection(s) with a new subtype, but no human-to-human spread or at most rare instances of spread to a close contact.

#2 - What *Potential Impact* can we expect from this Pandemic threat?

Scale of Impact **from Avian Influenza**

Purely animal disease

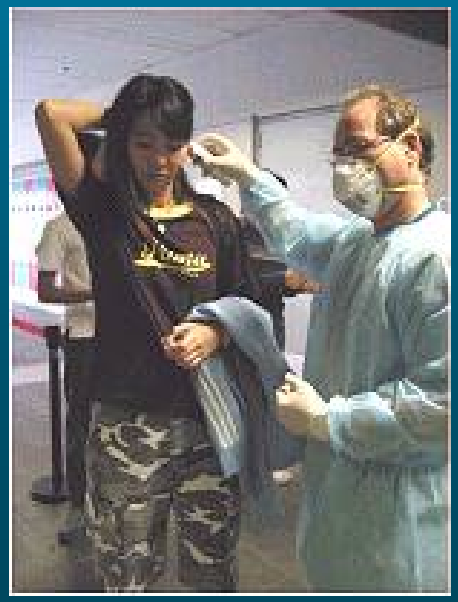
Heavy seasonal flu

Protracted infrastructure collapse

Pandemic Impact

What does it mean to ***IHS***?

1. Emphasis on Diagnosis & Surveillance
2. Emphasis on Isolation Procedures
3. Emphasis on EPI & IC
4. Public concern will be heightened



Pandemic Impact

What does it mean to ***IHS***?

5. Antivirals/flu vaccines in shorter supply
6. Emphasis on PPE with shortages of N-95's
7. Planning for staffing shortages & furlough policies

Pandemic Impact

What does it mean to ***IHS***?

8. Prepare isolation/quarantine sites under the ***HHS Pandemic Influenza Plan***, Part 2, Suppl. 8 – *Community Disease Control*

Pandemic Impact

What does it mean to ***IHS***?

9. Shortages of OTC flu meds & other commodities
10. Plan for an unreliable utilities & supplies

Pandemic Impact

What does it mean to ***IHS***?

11. Plan for mental health support & mortuary needs

Pandemic Impact

What does it mean to ***IHS***?

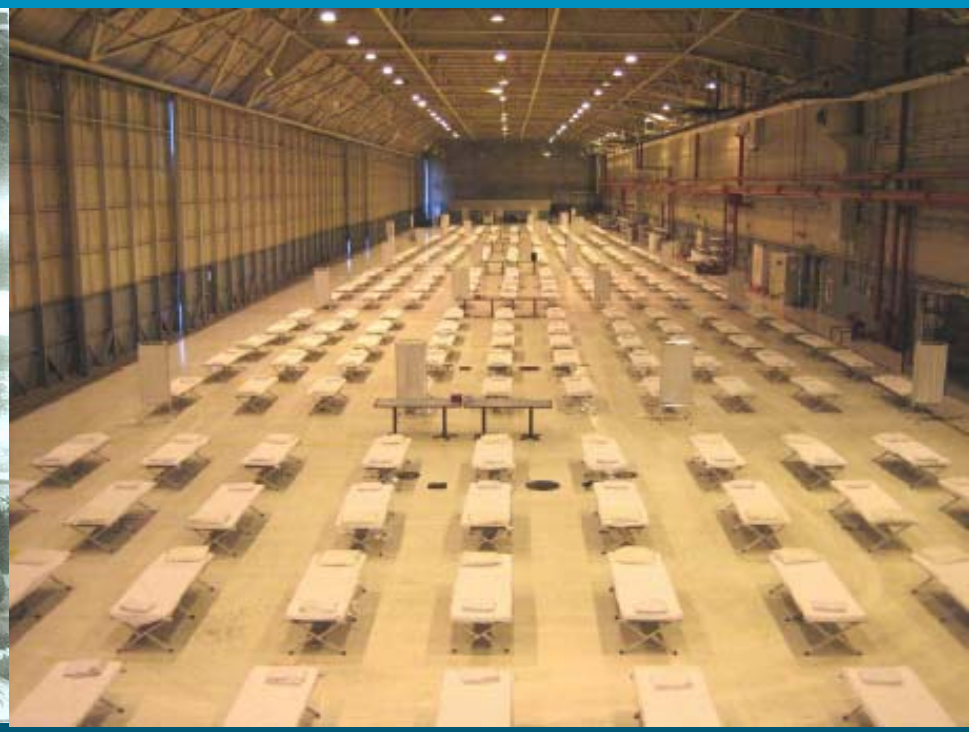
12. Expect to hold our collective breaths for a while.

#3 –Healthcare Pandemic Planning

Where are we now?

1918

U.S. Navy Great Lakes Training Center (?)



2005

Federal Medical Center response to Hurricane Katrina

Our Obligation -

HHS Pandemic Influenza Plan

OVERVIEW - The ***HHS Pandemic Influenza Plan*** is structured into 2 Parts

Part 1, with Appendices

The working parts of the ***HHS Pandemic Influenza Plan*** are found in the Supplements to Part 2, titled *Public Health Guidance to State and Local Partners*

HHS Pandemic Influenza Plan, Part 2, Supplements

1. ***Pandemic Influenza Surveillance***
2. ***Laboratory Diagnosis***
3. ***Hospital Planning***
4. ***Infection Control***
5. ***Clinical Guidelines***
6. ***Vaccine Distribution***
7. ***Antiviral Distribution***
8. ***Community Disease Control***
9. ***Managing Travel-related Risk of Disease Transmission***
10. ***Public Health Communications***
11. ***Workforce Support***

Healthcare Delivery Planning is Driven by *Part 2,* Supplement #3 *Hospital Planning*

Interpandemic and Pandemic Alert Phase Responsibilities

Healthcare facilities must also develop written plans that address:

- **disease surveillance,**
- **hospital communications,**
- **education and training,**
- **triage and clinical evaluation, facility access,**
- **occupational health,**
- **use and administration of vaccines and antiviral drugs,**
- **surge capacity,**
- **facility access & security,**
- **supply chain and access to critical inventory needs,**
- **and mortuary issues.**

HHS Pandemic Plan *Part 2,* Supplement *#3, Hospital Planning (cont.)*

Major Divisions:

1. Planning for Hospital Care
2. Planning for Provision of Care in Non-Hospital Setting, including *non-hospital healthcare settings* (clinics) and *non-healthcare sites*

How Effectively are the HHS Plan Elements Addressed by Existing Healthcare All-Hazards Plans?

Tuba City Regional Health Care Corporation All-Hazards Plan

The TCRHCC Plan addresses:

- Incident Command System
- Training and Evaluation
- Emergency Credentialing and Staffing
- Internal & External Communications
- Continuation of Operations (COOP)
- Essential Functions
- Orders of Succession

Tuba City Regional Health Care Corporation All-Hazards Plan (continued)

- Facility Security
- Special Morgue Needs
- Vital Records and Databases
- Delegations of Authority
- Triage & Patient Care
- Alternate Care Sites

Tuba City Regional Health Care Corporation All-Hazards Plan (continued)

- Human Capital
- Hazard Vulnerability Assessment (HVA) Driven

The #2 Ranking for the Tuba City HVA is *Mass Casualty due to Medical/Infectious Cause*

Ranking is determined by the algorithm:

Probability X Severity X Risk

Navajo Area Pandemic Planning Philosophy

- Meet Federal Obligations
- Comply with requirements under the National Response Plan
- Incorporate the National Incident Management System (NIMS) *(use ICS Structure)*
- Address Jurisdictional Concerns
- Utilize existing Hospital Plans
- Plan into the future (Pandemic vs. Pandemic Influenza Plan)
- Focus on healthcare responsibility

Navajo Area Pandemic Planning Assumptions:

- Need for Public Information
- Sustained Staff Absences
- Utility Interruptions
- Disruption of Supply Deliveries
- Vaccine and Pharmaceutical Shortages
- Consider Temporary Civil Unrest
- Mass Casualty due to Infectious Disease

NAIHS Pandemic Plan Elements

- *Personnel*
- *Alternate Locations*
- *Transportation*
- *Critical Suppliers*
- *Disease Surveillance*
- *Hospital Communications*
- *Education and Training*
- *Triage, clinical evaluation, and admissions*
- *Facility Access*
- *Occupational Health*
- *Vaccine and Antiviral Use*
- *Surge Capacity*
- *Security*
- *Mortuary Issues*

Steps to Merge Our Pandemic Plan with Existing All-Hazards Plans

- Community Outreach and Education
- Pandemic Specific Public Information Announcements
- Alternate Locations Pre-identified & Evaluated
- Lab Capacity and Agreements in Place
- Pandemic Specific Training for Staff to include Alternate Duty Assignments
- Plan for Staff Physical & Psycho-Social Needs
- Verify & Reinforce Communications Capabilities

Merging Our Pandemic Plan to Existing All-Hazards Plans (continued)

- Plan for Surge Capacity
- Clarify Furlough Policies
- Identify Critical Suppliers & Services
- Identify Alternate Resources
- Update Recall Lists
- Designate Emergency Purchasing Authority Three Deep
- Re-evaluate Morgue Needs for Long-term Requirements

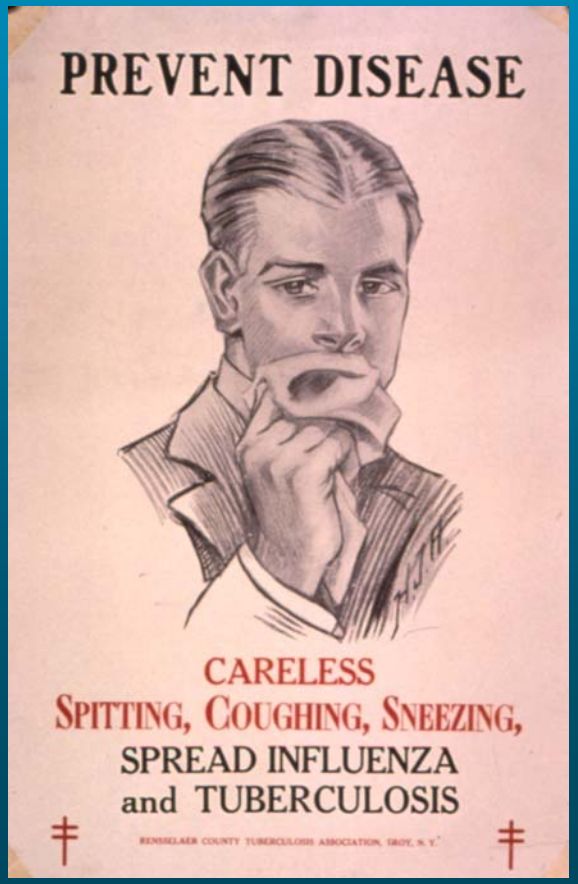
#4 - What is the role of technology in Pandemic Preparedness?

Information Technology Roles in Planning & Response

- Diagnostics
- Surveillance

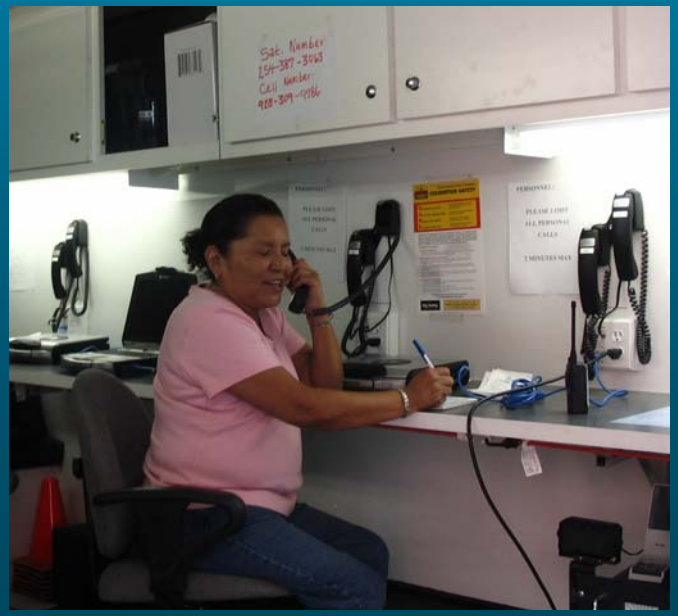
Information Technology Roles in Planning & Response

- Education & Training
- Purchasing and Inventory Control
- Recordkeeping



Information Technology Roles in Planning & Response

- Communications



Information Technology Roles in Planning & Response

- Occupational Health
  - Social Distancing
  - Psycho-social support

Navajo MIS/IRM-IT Pandemic Preparedness Initiatives

- *Assessments / Required Resources (Gap Analysis)*
- *What is required based on past emergency events? What wasn't working?*
- *Cells Phones (system interconnectivity & WEPS)*
- *SU/NAO Emergency Contact Numbers*
- *Satellite Phones*
- *UFH/VHF Base Stations*
- *Alternate Sites Communication Requirements*
- *Potential Web Site Alert Systems*
- *Consolidate Acquisition Requirements*

Questions or Comments?